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peninsula, are all discussed from the point of view of this search for an additional or an easier access to another sea. Thirdly, maritime powers, in his opinion, necessarily strive to extend their dominion over the coasts which face their own. Rome and Carthage, Italy looking across the narrow Adriatic, and also across the Mediterranean to Tripoli, France and Algiers, the designs of Britain upon the coasts which encircle the Indian Ocean, are all given as examples. Again he points out that when any power possesses a part of a navigable stream there is a tendency for it to seek to extend its dominion down to the mouth. Similarly, a colonizing power which has taken possession of the mouth of a river tends also to follow that river up to its source. The same thing may tend to happen in civilized countries, if the water of the river is used for irrigation, or if stream control is necessary. Thus the control of the lower course of the Vistula by Prussia is difficult because its upper waters are extra-Prussian. But the difficulty of the Polish question makes it necessary for Prussia to avoid covetousness in this connection, while a frontier adjustment which would deprive Prussia of the lower Vistula would cut off wholly German territory from the empire. The Rhine, he states, is another case where purely political conditions stand in the way of a natural economic tendency. It is an advantage to Germany for the mouth of this river to remain in the hands of a neutral state so long as the neutrality of this state is effectively maintained, for as it faces a powerful sea power, it would, if German, be liable to blockade in war time. Again, the fact that the Elbe and Danube are both Austrian as well as German rivers means that those two powers must either be allies or enemies, and these rivers thus form part of the geographical justification of the triple alliance. On the other hand, the relation of the great rivers of South America to the different states there suggests to the author that the political division of South America is in an unfinished condition, and that great readjustment will probably take place there.

Finally Dr. Dix is of opinion that a spe-

cifically modern cause of political differences among nations lies in warring interests in the construction of great transcontinental railway routes. The permanent tension between Britain and Germany he ascribes, not to the causes usually given on either side, but to the great extra-European railway schemes of the two powers. Germany, he says, is desirous of constructing and controlling an east to west line across the continent of Africa, while Britain desires to complete the Cape to Cairo route, to which Germany is strongly opposed. Similarly, he states that Britain is desirous of linking the Nile to the Indus by rail, and therefore opposes the completion of the Bagdad line to the Persian Gulf under German auspices. These causes of dissension might be got over by a mutual arrangement between the powers, or by a German-British alliance.

#### THE HUXLEY LECTURE

THE Huxley lecture at Charing Cross Hospital was delivered by Sir Ronald Ross on November 2. From the report in the *British Medical Journal* we learn that before proceeding to the main subject of his address, which discussed recent advances in science and their bearing on medicine and surgery, with special reference to malaria and the transmission of diseases, he paid a well-conceived tribute to Huxley, who, Sir Ronald Ross said, was not only the bulldog of Darwin, and the interpreter of Darwin's profundities to the world, but also a patient and passionate investigator and a patient and dispassionate thinker regarding phenomena. But, the lecturer continued, Huxley was still more: he was a philosopher possessing all the very first qualities required for true philosophy. The clarity of his style was itself a guarantee of the genuineness and completeness of his thought. Secondly, his mind was fiercely critical in its search for truth, and he accepted nothing as fact which he himself had not endeavored to probe to the depths. Thirdly, no one has ever doubted that his aim was, not to astonish or to defeat or to persuade, so much as to reach the actual truth of every matter

with which he dealt. He would have been delighted, had he lived, to recognize the bearing of recent advances in science on the medicine of the tropics. Sir Ronald Ross devoted the main part of his lecture to tracing the history of the modern application of parasitology to etiology and pathology, dealing in particular with the growth of knowledge with regard to filaria, piroplasma and the malarial organisms. He sketched his own researches, the full history of which had, he said, been given in his Nobel lecture. It was only after several years' work that he recognized that the malarial infection was carried by a certain genus of mosquitoes only, not by *Culex* or *Stegomyia*, but by the anophelines. He made the observation that the spores of the analogous malarial parasites of birds which he had already recognized in *Culex* entered the insect's salivary or poison glands. This led to the disclosure of the full truth, namely, that the parasites were not only taken from man by the mosquitoes, as Manson had supposed, and not only put into man by the mosquitoes, as King supposed, but that both hypotheses were true, the insects carrying the parasites directly from man to man. Summarizing the results obtained, he said that from the time of the Romans it was known that the malarial fevers were connected with marshes and stagnant water in warm countries. Later, when it was seen that the disease was not confined to the proximity of marshes, the theorists conceived that there was a telluric poison which caused malaria and was especially abundant in damp places. All this was a very general proposition; and in order to prevent the disease, it was necessary to undertake very extensive drainage. The new knowledge obtained rendered it possible to particularize the exact route of infection. It was now known that the poison was not spread uniformly in the air of warm countries, but was always contained in the minute bodies of certain insects, and more than that, in the still more minute salivary glands of these creatures. The discovery of the full life-cycle of the parasites made it possible not only to predicate the route of infection, but to determine exactly which species of mosquitoes were

concerned, and to study the habits of the inculpatated species. The genera *Culex* and *Stegomyia*, which it was found did not carry the malarial parasite, breed most commonly in artificial collections of water around houses, the anophelines breed principally in natural collections of water such as marshes, puddles, streamlets and the edges of lakes, ponds and rivers. These observations showed the way to other inquiries which cleared up the epidemiology of yellow fever, sleeping sickness, tick fever, plague and might possibly throw light on that of dengue, Mediterranean fever and measles.

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#### SCIENTIFIC NOTES AND NEWS

At the meeting of the American Society of Naturalists, held on December 31, 1914, Professor Hugo DeVries and Professor Wilhelm Roux were elected to honorary membership.

SIGNOR GUGLIELMO MARCONI has been appointed a member of the Italian senate by King Victor Emmanuel.

It is one of the privileges of the Spanish Academia de Medicina that it is entitled to a seat in the senate. The member of the academy recently elected senator in this way is Dr. B. G. Alvarez, one of the editors of the *Pediatría Española*.

DR. CHARLES R. VAN HISE, president of the University of Wisconsin, has been elected president of the Utilities Bureau, established as an agency for municipalities in their dealings with public utility companies.

DR. RAYMOND PEARL, of the Maine Agricultural Experiment Station, has been elected a member of the editorial board of the *Journal of Experimental Zoology*.

THE American Institute of Mining Engineers, the American Electrochemical Society and the Mining and Metallurgical Society of America are giving a complimentary dinner on Friday, January 15, at the Hotel Plaza to Dr. Frederick Gardner Cottrell, in charge of the San Francisco laboratory of the Bureau of Mines, in recognition of his contributions to research. It is well known that Dr. Cottrell assigned the patents for his process of electro-